

# Cover Letter

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## Postdoctoral Position Universität Zürich - LHCb Experiment

Dear Prof. Nicola Serra,

I would like to apply for the postdoctoral position at Universität Zürich for the LHCb experiment. I was very pleased to learn about the position and read the description, that I felt was molded around my knowledge, skills and experience.

Being part of the CMS experiment during my Ph.D. studies I have learned a lot, but most importantly, that interesting science is achieved by making daring decisions. My Ph.D. analysis was not a mainstream when I started working on it, and it is developed and executed completely by me. I study the helicity distributions of the  $Z\gamma$  production by looking at the angular distribution of the final state particles (electrons/muons and a photon in my case). This analysis was actually inspired by the B-meson decay analysis and has not been performed at a hadron collider before. Hadron colliders being considered .messy., are not usually seen as an effective source for the multidimensional full kinematic analysis. However, I would be very interested to search for the new physics through the angular distributions at the machine that was created to observe and study the .beauty. of physics.

Precise tracking and vertexing is the vital part of the high energy experiments, and especially so with the secondary vertices of the b-quark. I have the experience with the CMS pixel detector, which should be an asset for constructing the micro-strip tracker for the LHCb.

Last, but not least, I would enjoy the opportunity to supervise the students working in the particle physics. In this field, students often jump on the very fast moving train of huge collaborations and are certainly to benefit from the recent graduates who have not yet forgotten the adrenaline rush of this jump and even some pain from smacking against the train wall. Please, consider my application for the postdoctoral position. I attach my application documents for your consideration:

- Curriculum Vitae
- Statement of Research

The following referees will provide the recommendation letters:

- **Dr. Tim Bolton** - Kansas State University : [bolton@phys.ksu.edu](mailto:bolton@phys.ksu.edu)
- **Dr. Danek Kotlinski** - Paul Scherrer Institute : [danek.kotlinski@psi.ch](mailto:danek.kotlinski@psi.ch)
- **Dr. Kaori Maeshima** - Fermilab : [maeshima@fnal.gov](mailto:maeshima@fnal.gov)

I look forward to hearing from you. Please, feel free to contact me if you need any additional information.

Sincerely,

Irakli Chakaberia

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